

Amendments to the Claims

This listing of claims will replace all prior versions, and listings, of claims in the application.

All claims currently being amended are shown with deleted text struckthrough or double bracketed and new text underlined. Additionally, the status of each claim is indicated in parenthetical expression following the claim number.

Claims 1, 2, 4-7, 10, 11, 13-16 and 24 remain in this application.

Claims 13 and 14 are being amended.

LISTING OF CLAIMS:

1. (Previously Presented) A communications system, comprising:
a channel encoder for encoding a plurality of information bits;
a mapping unit coupled to the channel encoder for mapping the plurality of information bits into a first set of quadrature phase shift keying (QPSK) symbols and a second set of QPSK symbols,

wherein every successive predetermined number of information bits are mapped to a first QPSK symbol and a second QPSK symbol in one symbol period in accordance with a mapping table, and the predetermined number of information bits is three;

a first modulation unit coupled to the mapping unit for converting the first QPSK symbol into a first QPSK constellation symbol; and

a second modulation coupled to the mapping unit for converting the second QPSK symbol into a second QPSK constellation symbol.

2. (Original) The system of claim 1, further comprising a first and a second antennas coupled to the first and second modulation units, respectively, for transmitting the first and the second QPSK constellation symbols simultaneously.

3. (Canceled)

~~3~~
4. (Original) The system of claim 1, wherein the first and the second set of QPSK symbols include one of four states 0, 1, 2 and 3.

~~4~~
5. (Original) The system of claim 1, wherein the first and the second QPSK constellation symbols include one of four states 1, j, -1 and -j.

~~5~~
6. (Previously Presented) The system of claim 1, further comprising a receiver antenna for receiving the sum of the QPSK constellation symbols transmitted in a same symbol period and combined in the air.

~~6~~
7. (Previously Presented) The system of claim ~~6~~, wherein the received constellation symbols combined in the air correspond to an 8-point signal constellation that is designed on a transmitter side.

8-9. (Canceled)

10. (Previously Presented) A method of enhancing transmission rate in a wireless communication system, comprising:

providing a plurality of information bits; and
mapping the plurality of information bits into a first set of quadrature phase shift keying (QPSK) symbols and a second set of QPSK symbols,

wherein every successive predetermined number of information bits are mapped to a first QPSK symbol and a second QPSK symbol in one symbol period in accordance with a mapping table, and the predetermined number of information bits is three.

11. (Original) The method of claim 10, further comprising converting the first and the second QPSK symbols into a first QPSK constellation symbol and a second QPSK constellation symbol, respectively.

12. (Canceled)

13. (Currently Amended) The method of claim 10, wherein the step of providing a plurality of information bits includes channel coding error-correcting encoding a different plurality of information bits.

14. (Currently Amended) The method of claim 13, wherein the channel coding error-correcting encoding rate is 1/3.

15. (Original) The method of claim 11, further comprising simultaneously transmitting the first and the second QPSK constellation symbols via a first and a second antenna, respectively.

16. (Previously Presented) The method of claim 10, further comprising receiving the sum of the QPSK constellation symbols transmitted in a same symbol period.

17-23. (Canceled)

~~24.~~⁷ (Previously Presented) The system of claim 1, wherein the channel encoder is a trellis-based channel encoder.